DOCUMENT RESUME

ED 400 069 PS 024 572

AUTHOR Johnson, Robbin B.
TITLE The Effectiveness of Preschool Education on Academic Achievement.
PUB DATE May 96
NOTE 9p.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Academic Achievement; Comparative Analysis; *Elementary School Students; Followup Studies; Grade 3; Mathematics Achievement; Minority Groups; *Outcomes of Education; *Preschool Education; Primary Education; Program Evaluation; Reading Achievement
IDENTIFIERS Illinois (Chicago)

ABSTRACT

This study examined the impact of preschool education on the academic achievement of 100 third graders from May Community Academic Public School in Chicago, Illinois. The subjects were all minority students. A random sample of 30 students per group was selected from the 55 students who had received preschool education and the 45 who had not. The mathematics and reading results of the Iowa Tests of Basic Skills were used as the achievement measure. Findings indicated that third graders who had preschool experience had significantly higher reading and mathematics achievement scores than third grades who had not had preschool education. (KDFB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
X This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

ED 400 069

THE EFFECTIVENESS OF PRESCHOOL EDUCATION ON ACADEMIC ACHIEVEMENT

Robbin B. Johnson

There are many students in the Chicago Public Schools who are receiving or have received some type of preschool education via pre-kindergarten, nursery school, or head start programs. Various preschool education programs are being utilized with the Chicago system. At the present time, there is an abundance of information on these programs with respect to their effect on student academic achievement or their effect on the educational environment in general. Since there has been a proliferation of early childhood education in the past few years, teachers, parents, local school councils, and school administrators need to know if students participating in these preschool programs are obtaining educational benefit from this method of introduction to education whether it relates to reading or mathematics achievement or any other area of instruction.

Given the proper information, educators can make the proper decisions about investing more money and time in these type of early educational programs. The decision educators and administrators make now involving preschool education and their continued implementation within our schools could have long term effects on our students' education now and in the future.

The beginnings of this field were just like those of the human infant- slow, gradual, and dependent on the nurture and care of many individuals who foster the profession's gradually developing sense of self-awareness. It is difficult to pinpoint just when early childhood education began. Perhaps the field's birth can be traced to the philosophers Plato and Aristotle, who advocated that a child's education start well before age six, or to John Amos Comenius (1592-1670), a Czech educator and bishop who wrote *The School of Infancy* in 1628 and recommended that education begin on the mother's lap. Education for Comenius would be the same as play, as natural as life and growth itself (Aries, 1962). Nevertheless, many cite Jean Jacques Rousseau (1712-1778) as responsible for the birth of early childhood education. In his book *Emile* (1762) Rousseau stressed the importance of beginning a child's education at birth. He also believed that children's education should be based on the nature of children, not on adults' notions of what children are like or should be like. Rather than sending children to schools, he felt they should be raised in the country, their education left up to nature.

Preschool education can be defined as children attending some type of formal schooling between the ages of three and five years of age. Many people believe that preschool education will have an effect on the achievement of educators in our age. Researchers long ago demonstrated that early childhood education can work in schools and have found positive results in achievement (Anderson, 1994).
Kutnick (1993) described the final status of classroom practice in Texas prekindergarten programs in comparison to initial study findings and findings from a self-study component

PS 024572

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY
Robbie B. Johnson
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

BEST COPY AVAILABLE

implemented in 1993 with prekindergarten staffs participating in the study. Findings from the longitudinal component indicated positive trends in academic performance for children who participated in prekindergarten programs. The results of the study showed that students from prekindergarten programs are less likely to be retained, closer to being on grade level in their reading comprehension, and less likely to be referred for special education programs.

Furthermore, Kohart (1995) saw that although current research has not shown prevailing effects of the preschool experience on overall achievement scores, it does indicate a positive effect on language related skills, particularly for males. This study examined the relationship between language related achievement test scores between those first graders with preschool experience and those without. Subjects from Antwerp Elementary in Antwerp, Ohio, a small rural community, where 19 first-graders who had attended preschool and 39 who had not. Scores from the Primary I level of the Metropolitan Achievement Test, sixth edition, were compared between the two groups. Analyses revealed that there was no significant difference among the two groups of children. The results suggest that language achievement test scores are not indicative of preschool effectiveness.

Richman (1995) examined the relationship of parental attitudes and parental warmth to child academic skills and self-perceptions of competence. Suggests that although parental warmth was not significantly correlated with parental attitudes about early academics, and neither academic attitudes nor warmth predicted child achievement on an Academic Skills Inventory, high correlations were found between parental warmth and self-efficacy.

On the other hand, Smith (1994) investigated the progress of black students. Although both blacks and whites have made important gains in education over the past two decades, it is apparent that blacks continue to trail whites in many areas. These findings outline some of the educational differences between blacks and whites. Black children still start school with less preschool experience than white children. Gaps in the academic performance of blacks and whites appear as early as age 9 and persist through age 17. Despite substantial gains made recently by blacks, their scores on the Scholastic Aptitude Test still lag behind those of whites. Black students are still more likely to drop out than whites, although the gap is closing. Black students are also more likely than their white peers to face a disorderly learning environment, even though black and white students have similar attitudes about the teaching quality in their schools. Both black and white high school graduates are following a more rigorous curriculum than a decade ago, but black high school graduates are still less likely to take advance science and mathematics courses. The educational aspirations of black and white students are similar, but blacks are less likely to make an immediate transition to college and are less likely to have completed college by ages 25 to 29 years. Blacks have lower literacy levels than whites as adults.

Next, Zill (1992) researched the trends in family life and children's school performance. Education professionals have long known that family background is a stronger predictor

of academic success than are school or teacher characteristics. The past 30 years have seen a series of drastic alterations in patterns of family living in the United States, and these changes mean that a substantial number of youngsters are being born or are growing up in circumstances that put them at risk of low achievement and school failure. Family characteristics associated with school difficulties are more grade-repetition rates are adjusted for parent education, family income, and family composition, these ethnic disparities are substantially reduced. Research indicates that the disadvantaged minority students of today are doing better than those of yesterday. There is a scale that assesses what parents do to stimulate achievement in preschool and elementary-age children. This is the Home Observation for the Measurement of Environment (HOME) scale. An abbreviated version of the HOME scale was used in the National Longitudinal Survey of Youth (NLSY) to begin to study family influence on student achievement. Considerable further research is required to explore the complex relationships between family life and academic achievement.

Additionally, Borger (1993) studied the Chicago Public Schools' 1992-93 Prekindergarten Program for 3- to 5-year old children at risk of academic failure. During the 1992-93 academic year, the State Prekindergarten Program served 10,735 3- and 4-year-olds at 286 sites throughout the city. The report describes and evaluates the program's four components: (1) a screening component to identify eligible children; (2) an educational component to prepare at-risk preschool children for success in school; (3) a health component to stimulate and encourage growth in physical health and ability; and (4) a parent component to involve parents in the education of their children and assist them in obtaining the necessary services to provide for their family's welfare. In the context of the particular components, the report describes the program's identification procedures to document at-risk children; educational intervention consisting of experiences designed to promote positive self-image and learning through growth in cognitive functioning, language and communication skills; social-emotional awareness, and physical health and ability; and a planned program of parent activities, including classroom volunteer opportunities, parent meetings, workshops, field trips, and health and social support services.

Anderson (1994) reviewed the literature on the effects of preschool attendance on academic success in elementary school and reports on a study designed to investigate the effect of preschool education on the academic achievement of at-risk, minority-group kindergarten children. The Test of Basic Experience (TOBE) was administered at the beginning of the school year to 30 kindergarters who had attended preschool and a control group of 30 who had not. A comparison of the test results found a statistically significant difference between the achievement of the children who had attended preschool and the children who had not.

Finally, Currie (1994) used data from the National Longitudinal Survey of Youth to investigate the effects of participation in Head Start preschool programs on a range of child outcomes. In order to control for selection into the Head Start program, comparisons are drawn between siblings and also between the relative benefits of Head

Start versus other preschool programs. The study found large and significant gains associated with attending Head Start, as measured by test scores. These gains were evident relative to children who did not attend preschool, as well as to children who attended non-Head Start preschools. The study also found that while whites and blacks experienced initial gains in test scores as a result of participation in Head Start, the gains of blacks were quickly lost while the gains of whites0persisted into adulthood. Head Start participation significantly reduced the probability that a white child would repeat a grade, but had no effect on grade repetition among black children. Relative to children who did not attend preschool, both whites and blacks gained greater access to preventive health services in Head Start and non-Head Start programs.

Literature on research relating to the effect of preschool education on academic achievement was very adequate. The available literature did suggest that early childhood education does increase the achievement level of reading and mathematics students who utililize this program. The literature also seem to suggest that in some instances, preschool education does not increase or decrease the achievement level of students receiving it. The literature does suggest that, in most cases, early childhood education programs does increase language related skills and their attitude toward school improved.

Procedures

Population/Sample:

The population for this study will include 100 third grade students. The students attend May Community Academy Public School which is located in a predominantly low and low-middle socio-economic neighborhood in Chicago's Greater West Garfield area. The population is comprised of 100% minority students.

From the 100 third grade students, the school records showed that at least 55 received preschool education while 45 did not receive preschool education. Thirty students each were randomly selected from the sub-populations.

Each spring the Iowa Tests of Basic Skills (ITBS) are administered to each student in Chicago's Public elementary schools. Two samples, which had been randomly selected from the two identified populations of preschool and non-preschool attendance, were classified as the experimental and control group, respectively. The mathematics and reading results of the ITBS administered during the Spring of 1995 school year will be used in this study. The posttest only control group design was used.

Iowa Tests of Basic Skills; 1978 edition; Levels 9-14, Form 7 and 8. The within grade Ruder-Richardson twenty reliabilities for the eleven subtests and total scores are high, generally greater than .85, with many exceeding .90. The K-R twenty reliability of the composite score for each level of the test is .98. The intercorrelations between subtests are lower than correlations between total scores, with the former ranging from the mid .50s to .70 to .85 range. Approximately 35 to 50 percent of the variance between any two

subtests is shared. The variance between any two of the vocabulary, reading, language, study skills or mathematics total score is shared in the 50 to 70 percent range.

Findings of the Study

The samples for the study included third grade students of May Academy Elementary School. Each Spring the students take the Iowa Test of Basic Skills (ITBS). From these third grade students, two groups were randomly selected. Subjects in one group received preschool education while subjects in the other group did not receive preschool education. Results from the 1995 ITBS reading and mathematics subtests were used as a posttest. A t test ($p < .05$) for independent samples was done on these two sets of scores to determine if there was a statistically significant change in reading and mathematics achievement after exposure to the preschool program. Table 1 summarizes the statistical analyses.

Table 1

Means, Standard Deviations, and t Tests for the Experimental Group and Control Group for Reading and Mathematics Achievement Scores

Reading			
Test	Experimental N=30	Control N=30	t
Posttest			
M	3.35	1.57	6.8*
SD	1.21	0.72	

Mathematics			
Test	Experimental N=30	Control N=30	t
Posttest			
M	2.89	1.96	5.5*
SD	0.61	0.86	

df = 58 $p < .05$
*Significant at the .05 level

BEST COPY AVAILABLE

Summary

The purpose of this study was to determine if preschool education will effect academic achievement. The experimental group and control group was both statistically significant. The experimental group has a mean of 3.35 and 2.89 in reading and mathematics; and the control group with a mean of 1.57 and 1.96 in reading and mathematics.

Conclusions

The results of research findings in this study indicate that preschool education does effect the academic level of students. This information of the study support the research findings in the review of literature.

The review of literature overwhelming indicate that preschool education does effect academic achievement. A majority of educators in this study support preschool education. The research findings in this study appear to be consistent with the findings of a study by Anderson (1994) in which there was a statistically significant difference between the achievement of children who attended preschool and the children who did not attend preschool..

Implications

The results of this study suggest that preschool education does effect academic achievement. There are many studies that support these findings.

The widespread use of this program and other early childhood programs in our schools will continue to grow. Having a progressive early childhood program means more students on grade level and less retention of students. This program will continue to grow and provide positive outcomes in the future.

Recommendations

1. Children turning three by September 1 should be placed in some type of early childhood program.

2. Where necessary, group all age levels and keep these classes small and staffed with well-trained and experienced teachers.

3. Heterogeneous classes should include reduced class sizes for individualization of instruction.

4. Teachers of low-achieving students should raise their standards and level of expectations for all students.

5. Teachers should encourage low-ability students (especially poor and non-white students) to aspire toward high-status, high paying occupations so that these students maintain high self-esteem and aspirations.

6. Recommendations for further research:
    a. larger sample/population.
    b. experimental study.
    c. longitudinal study of four-five years.

REFERENCES

Anderson, Brenda. "The Effect of Preschool Education on Academic Achievement of At Risk Children." Preschool Effects, 1994, 10 pages.

Borger, Jeanne. "Illinois Initiatives for Educational Reform: Evaluation of the 1993 State Prekindergarten Program." Research, Evaluation & Planning Report., 1993, 84 pages.

Currie, Janet. "Does Head Start Make a Difference?" Labor and Population Program Working Paper Series, 1994, 54 pages.

Kohart, Rebecca. "The Effects of Preschool Experiences on Academic Achievement of First Graders." Developmentally Appropriate Programs, 1995, 13 pages.

Kutnick, Peter. "Texas Evaluation Study of Prekindergarten Programs. Final Report Summary." Early Childhood Development and Care, 1993, 26 pages.

Mussen, Paul H. "Child Development and Personality." Harper and Row Publishers, 1990, p 1-32.

Richman, Elizabeth R. "Academic Orientation and Warmth in Mothers and Fathers of Preschools: Effects of Academic Skills and Self-Perceptions of Competence." Early Education and Development, July 1995, p 197-213.

Seefeldt, Carol. "Early Childhood Education." Macmillan Publishing Company, 1990, p 26-52.

Smith, Thomas. "The Educational Progress of Black Students. Findings from 'The Condition of Education'." The Condition of Education, 1994, 28 pages.

Zill, Nicholas. "Trends in Family Life and Children's School Performance." Paper presented at the Symposium "Impact of Changes in the Family on Education Linkages of Sociologies of Family and Education" American Sociological Association, August 1992, 26 pages.

RJ:rj
ci429